IN THE CLAIMS

This listing of claims replaces all prior versions and listings of the claims in this application:

Claims 1-14 (Cancelled).

15. (Currently Amended) A recombinant *Drosophila melanogaster* kinase characterized by:

remaining stable during synthesis of nucleoside monophosphate in the absence of a stabilizing SH reagent and a stabilizing protein,

accepting all natural deoxynucleosides,

~~being derived from cells of a nonvertebrate organism,~~ and

being obtained by a method comprising:

isolating the coding sequence of the recombinant kinase from *Drosophila melanogaster*,

cloning a structure gene in an expression vector with an inducible promoter for *E. coli*,

transforming the expression vector in an *E. coli* host strain, and

expressing the *Drosophila melanogaster* kinase in *E. coli* cells by induction.

16. (Currently Amended) The recombinant kinase of claim 15 wherein the kinase retains over 90% of its activity after incubation in a 50 mM Tris pH 7.5 and 2.5 mM $MgCl_2$ solution at 37°C for 30 to 50 minutes~~nonvertebrate organism is an insect~~.

17. (Previously Presented) The recombinant kinase of claim 15 further characterized by having a specific activity of at least 20 U/mg (1U = 1 μmol/min) for all natural deoxynucleosides.

18. (Previously Presented) The recombinant kinase of claim 15 further characterized by having a specificity constant of >10,000 $M^{-1}s^{-1}$ for all natural deoxynucleosides.

19. (Previously Presented) The recombinant kinase of claim 15 further characterized by having a half-life of ≥50 hours in Tris buffer with 5 mM $MgCl_2$ and of ≥25 hours in water at 37°C.

20. (Previously Presented) The recombinant kinase of claim 15 further characterized by having a temperature optimum between 40° and 60°C.

21. (Currently Amended) The recombinant kinase of claim 15 wherein the coding sequence of the recombinant kinase comprises the sequence of SEQ ID No: 1~~16 wherein the insect is Drosophila melanogaster~~.

22. (Currently Amended) A recombinant *Drosophila melanogaster* kinase characterized by:

remaining stable during the synthesis of nucleoside monophosphate in the absence of a stabilizing SH reagent and stabilizing proteins,

accepting all natural deoxynucleosides, and

being isolated from a host cell transformed with DNA containing the *Drosophila melanogaster* gene coding for a native form of the recombinant kinase, wherein said kinase retains over 90% of its activity after incubation in a 50 mM Tris pH 7.5 and 2.5 mM $MgCl_2$ solution at 37°C for 30 to 50 minutes.

23. (Previously Presented) The recombinant kinase of claim 22 further characterized by having a specific activity of at least 20 U/mg (1 U = 1 µmol/min) for all natural deoxynucleosides.

24. (Previously Presented) The recombinant kinase of claim 22 further characterized by having a specificity constant of >10,000 $M^{-1}s^{-1}$ for all natural deoxynucleosides.

25. (Previously Presented) The recombinant kinase of claim 22 further characterized by having a half-life of ≥50 hours in Tris buffer with 5 mM $MgCl_2$ and of ≥ 25 hours in water at 37°C.

26. (Previously Presented) The recombinant kinase of claim 22 further characterized by having a temperature optimum between 40° and 60°C.

27. (New) The recombinant kinase of claim 22 wherein the kinase comprises an amino acid sequence encoded by the sequence of SEQ ID NO: 1.

28. (New) The recombinant kinase of claim 22 wherein said gene comprises the sequence of SEQ ID NO: 1.

29. (New) A recombinant deoxynucleoside kinase characterized by:

remaining stable during the synthesis of nucleoside monophosphate in the absence of a stabilizing SH reagent and stabilizing proteins

accepting all natural deoxynucleosides, and

retaining over 90% of its activity after incubation in a 50 mM Tris pH 7.5 and 2.5 mM $MgCl_2$ solution at 37°C for 30 to 50 minutes.